

Original Article

Factors Affecting the Informal Sector and its Relationship with Sustainable Development in Egypt

Citation: Elsayd, M.A.; Mostafa, M.H.; Khater, M. H. *Factors Affecting the Informal Sector and its Relationship with Sustainable Development in Egypt*. *Journal of African Population Studies* 2026, 39(1), 5327. <https://doi.org/10.59147/ejzjvf87>

Academic Editor: Ngianga-Bakwin Kandala

Received: 20 June 2026
Accepted: 29 September 2026
Published: 05 October 2026

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Abstract: (1) **Background:** This research aims to study the factors influencing the informal sector in Egypt and analyze their relationships with the Sustainable Development Goals (SDGs) within the framework of Egypt's Vision 2030. (2) **Methods:** The research is based on an integrated scientific methodology combining quantitative and qualitative analysis, utilizing secondary data from official statistics and international organization reports, in addition to primary field data collected through questionnaires and interviews. (3) **Results:** The study highlights the role of economic factors, such as limited income and non-inclusive economic growth, in driving labor towards informal employment. It also illustrates the impact of social and demographic factors, including gender, age, and educational level, in determining individuals' opportunities to engage in the informal sector. The research further reveals that the poor quality of education and vocational training contributes to the reproduction of informal labor and limits its opportunities for transitioning to formal work. The levels of informal employment are also affected by institutional and regulatory factors, such as administrative complexity, weak governance, the multiplicity of regulatory bodies, and limited trust in formal institutions. The research also shows that digital technological transformation presents an opportunity to expand informal work patterns, but it raises challenges for labor protection and integration into the legal framework. Environmental and spatial factors play a role in promoting the fragility of livelihoods and pushing individuals toward informal work, especially in rural areas, unplanned settlements, and in the context of climate change. The research reveals a close interrelation between these factors and the achievement of the SDGs, such as No Poverty, Decent Work and Economic Growth, Reduced Inequalities, Quality Education, strong institutions, digital transformation, and environmental sustainability. The findings emphasize that addressing the informal sector requires comprehensive, integrated policies that consider all economic, social, educational, institutional, technological, and environmental factors to ensure the achievement of inclusive and sustainable development. (4) **Conclusions:** The discussion concludes that addressing the informal sector requires comprehensive and integrated policies that account for all influencing factors. Focus must be placed on formalizing the sector, improving the quality of education and training, enhancing governance, utilizing technology, and considering environmental factors. Such an approach effectively and sustainably supports the realization of the SDGs and Egypt Vision (2030).

Keywords: Informal Sector, Formal Sector, Sustainable Development, Inclusive Economy, Egypt.

1. Introduction

The informal sector is one of the most prominent socio-economic phenomena in developing countries in general, and in the Egyptian economy in particular. It represents a vast area of productive and service activities conducted outside the official legal and regulatory framework of the state. This sector has gained increasing importance in recent decades as a result of structural economic transformations, high population growth rates, increased pressure on the formal labor

market, in addition to successive economic crises that have limited the formal sector's ability to absorb new entrants into the labor market.

In the Egyptian context, the informal sector is characterized by its widespread prevalence and the diversity of its activities, encompassing self-employment, unregistered micro and small enterprises, unpaid family work, in addition to service, trade, construction, and agriculture activities. This sector is viewed as a double-edged sword: on one hand, it contributes to providing employment opportunities and sources of income for wide segments of the population, especially low-income groups, youth, and women, and helps mitigate unemployment and poverty. On the other hand, the informal sector is associated with a set of development challenges, including low productivity, poor wages, absence of decent work conditions, lack of social protection, and limited tax contribution, which negatively affects the efficiency of the macro-economy and the state's capacity to finance development programs.

With Egypt's adoption of the Sustainable Development Vision (Egypt Vision 2030) and its commitment to the United Nations Sustainable Development Goals, the need has emerged for a deeper understanding of the nature of the informal sector, the factors affecting its size and characteristics, and the extent of its consistency or conflict with the sustainable development pathways across its economic, social, and environmental dimensions. Inclusive economic growth, decent work provision, or poverty and inequality reduction cannot be achieved without addressing the conditions of millions of workers in this sector and gradually integrating them into the formal economic system.

This study proceeds from the hypothesis that the expansion of the informal sector in Egypt is not merely a transient phenomenon or an individual choice, but rather the result of a complex interaction between economic, structural, institutional, regulatory, social, educational, as well as technological and environmental factors. Therefore, the study seeks to analyze these factors systematically, illustrate how they affect the dynamics of the informal sector, and explore their implications for achieving the SDGs, ultimately aiming to provide an analytical framework and practical recommendations that can contribute to formulating more inclusive, equitable, and sustainable policies.

2. Materials and Methods

The research relied on two approaches for data collection:

2.1. Approach: Desk Studies and Special Surveys

The researcher relied on a number of studies and surveys in analyzing data related to the phenomenon of the informal sector in Egypt. The most important surveys used were:

- [1] The raw data of the "Labor Market Survey [2018].
- [2] The raw data of the "Labor Force Survey [2021].

2.2. Approach: Field Research

Desk studies addressing the research topic revealed the existence of gaps related to the implementation of effective policies aimed at integrating the informal sector into the formal economy. In addition, most previous studies focused mainly on the economic and social dimensions, while the study of sustainable development impacts and mechanisms for integrating the informal sector into the formal sector did not receive sufficient attention. Furthermore, the lack of data necessary to achieve the objectives of the research highlighted the importance of conducting field research on a sample of workers.

2.3. To select this sample, the following steps were followed:

2.3.1. Defining the Research Population

The unit of analysis consisted of workers (economically active individuals) in the governorates of Cairo and Giza (as a case study), within the age group of 15–64 years. The geographical scope was limited to Cairo and Giza due to the distinctive characteristics of these two governorates compared to other governorates in Egypt.

Three projects were intentionally selected to represent the research population:

- El-Robiki City Project
- The Industrial Zone in 6th of October City
- Al-Ataba Market

2.3.2. Time Frame of the Research

The time frame for data collection was determined during the months of March, April, July, and September of 2024.

2.3.3. Determining the Sample Size

After determining the total sample size, it was distributed proportionally among the three research areas, as shown in the following table:

Size	Industrial Zone	Al-Ataba Market	El-Robiki	Total
Allocated Sample Size	423	55	20	498
Informal Sector Sample	274	36	6	316
Formal Sector Sample	149	19	14	182

Source: Calculated by the researcher

2.3.4. Questionnaire Design

A questionnaire form was designed consisting of seven main sections in addition to identification data, as follows (Appendix No. 1):

- **Section One:** General Information – contains five questions.
- **Section Two:** Economic Questions – contains nine questions.
- **Section Three:** Social Questions – contains six questions.
- **Section Four:** Environmental Questions – contains four questions.
- **Section Five:** Questions Related to Challenges and Opportunities – contains four questions.
- **Section Six:** Questions Related to Future Trends – contains three questions.
- **Section Seven:** Questions Related to Impacts on Sustainable Development – contains six questions.

2.3.5. Steps of Conducting the Field Research

Obtaining Approvals

A decree issued by the President of the Central Agency for Public Mobilization and Statistics (CAPMAS), Delegation No. (336) of 2025 dated 24/2/2025, was obtained. The decree included nine articles (Appendix No. 3).

1. Training Supervisors and Researchers
2. Data Collection During the Selected Four Months
3. Field Review and Data Verification
4. Data Processing

3. Research Problem

Despite the increasing importance of the informal sector in the Egyptian economy, both in terms of labor absorption and indirect contribution to economic activity, this sector still suffers from conceptual and methodological ambiguity in analysis, as well as limited comprehensive policies capable of addressing its multiple dimensions. The research problem lies in the existence of a clear gap between the actual role played by the informal sector in the economic and social reality and its potential for a positive and sustainable contribution to achieving the SDGs in Egypt.

The research problem is also highlighted by the limited integration between policies for regulating the informal sector and sustainable development policies, as the phenomenon of the informal sector is often addressed from a narrow administrative or tax perspective, without considering its social, human, and environmental dimensions. Furthermore, applied studies in the Egyptian context suffer from a lack of integrated analysis that links the factors influencing the informal sector with its direct and indirect repercussions on sustainable development indicators.

Accordingly, the research problem revolves around the following main question: To what extent do economic, social, institutional, and regulatory factors affect the expansion of the informal sector in Egypt, and how do the characteristics of this sector reflect on the achievement of the Sustainable Development Goals?

3.1. Research Questions

The main question gives rise to a set of sub-questions that the study seeks to answer:

- What is the size of the informal sector in Egypt, and what are its main characteristics in terms of activity type, and the age, gender, and educational composition of its workers?
- What are the most prominent economic factors influencing the expansion or contraction of the informal sector in Egypt?
- How do institutional and regulatory factors, such as the business environment, the tax system, and registration procedures, affect the decision of individuals and enterprises to operate outside the formal framework?
- How do working conditions in the informal sector affect the achievement of the Sustainable Development Goals, particularly those related to No Poverty, Decent Work, Gender Equality, and Inclusive Economic Growth?
- What are the policies and mechanisms capable of promoting the gradual integration of the informal sector into the formal economy, achieving a balance between the requirements of regulation, social protection, and economic sustainability?

3.2. Significance of the Study

- The significance of this research stems from the increasing importance of the informal sector in the structure of the Egyptian economy and the interweaving of its dimensions with various sustainable development issues. The study's importance can be highlighted at the scientific, practical, and policy levels as follows:

3.3 Scientific and Academic Significance: The research contributes to enriching the economic and developmental literature related to the informal sector by providing an integrated analysis that links the economic, social, and institutional factors influencing this sector with its sustainable developmental dimensions. The research is also distinguished by its treatment of the informal sector in Egypt within the framework of the SDGs, which remains a relatively limited area of focus in Arabic studies, thus enhancing the scientific value of the research and opening horizons for subsequent comparative or applied studies.

3.4. Applied and Practical Significance: The applied significance of the research lies in its presentation of an accurate analytical picture of the reality of workers in the informal sector, their working conditions, and their levels of economic and social vulnerability. This helps in understanding how this sector affects indicators of poverty, unemployment, decent work, and gender equality, making it possible to utilize the research findings in designing development programs and practical interventions aimed at improving the conditions of these groups and enhancing their productivity.

3.5. Policy and Decision-Making Significance: The research acquires special importance for policymakers as it provides an analytical framework that aids in reformulating policies related to regulating the informal sector, moving away

from traditional approaches that focus only on tax or regulatory aspects. The research clarifies the necessity of adopting comprehensive policies that account for social protection, simplification of procedures, and support for micro and small enterprises, thereby achieving a balance between the requirements of regulation and the realization of social justice and economic sustainability.

3.6. Developmental and Strategic Significance: The developmental significance of the study arises from its direct link to Egypt Vision 2030 and the SDGs, especially those related to No Poverty, Decent Work, Inclusive Economic Growth, and Reduced Inequalities. The research helps clarify the role that the integration of the informal sector into the formal economy can play as a tool for achieving more inclusive and sustainable development in the medium and long term.

3.7. Social Significance: The research sheds light on the social groups most involved in the informal sector, such as youth, women, and those with limited skills, and highlights the challenges they face in obtaining a stable income and social protection. Consequently, the research findings can contribute to strengthening the social dimension of development and supporting policies aimed at improving the quality of life and reducing social marginalization.

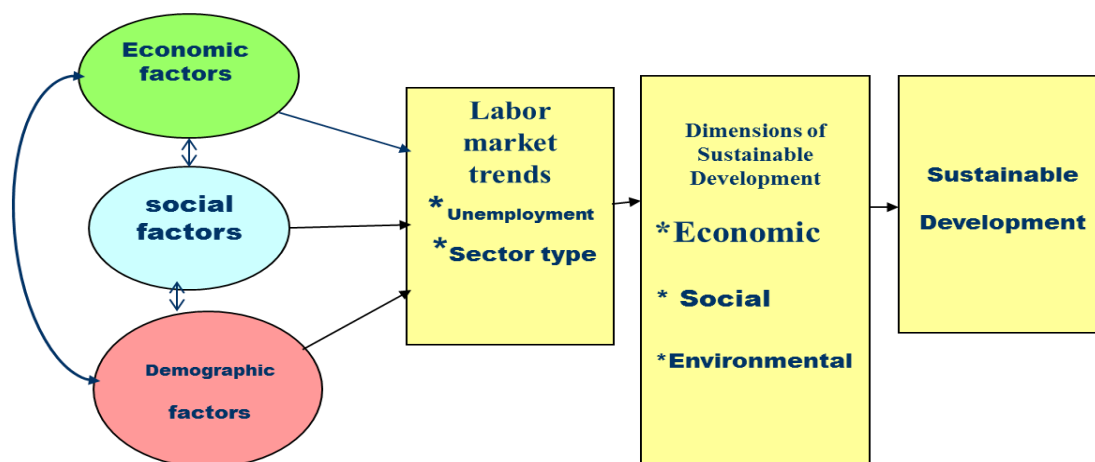
4. Theoretical Framework of the Research

The theoretical framework of this research is based on a set of economic, social, and developmental theories that seek to explain the emergence, persistence, and interaction of the informal sector with the path of sustainable development. The research adopts an integrated analytical approach that views the informal sector as a multi-dimensional structural phenomenon resulting from the interaction of economic, institutional, and social factors, rather than merely a temporary consequence of labor market imbalances.

4.1. Proposed Analytical Framework for the Study: In light of the above, the research adopts an analytical framework that links:

- **Economic Factors:** Economic growth, unemployment, income levels.
- **Institutional and Regulatory Factors:** Business environment, tax system, registration procedures.
- **Social and Educational Factors:** Education, gender, poverty.
- **Informal Sector Outcomes:** Employment, income, productivity, social protection.
- **Sustainable Development Goals:** No Poverty, Decent Work, Reduced Inequalities, Inclusive Growth.

Figure1: Theoretical Framework



Source: Prepared by the researcher.

This framework is used to analyze the causal relationship between the factors determining the informal sector and its implications for the sustainable development path in Egypt, allowing for the extraction of conclusions and policies based on a solid theoretical foundation.

5. Research Methodology

This study adopts an integrated scientific methodology that combines both quantitative and qualitative approaches, allowing for a more comprehensive understanding of the informal sector phenomenon in Egypt, and enabling a precise scientific analysis and interpretation of the factors influencing it and its relationship with the dimensions of sustainable development. This mixed methodology was chosen due to the multi-dimensionality of the phenomenon and the interconnectedness of its economic, social, and institutional determinants.

5.1. Research Approach

The research is based on a statistical analytical framework to measure the impact of economic, social, and demographic factors, as well as the causal relationship between them and the dimensions of sustainable development [economic, social, and environmental] in Egypt, allowing for the extraction of findings grounded in a solid theoretical foundation.

5.2. Research Hypotheses:

1. Economic Hypothesis:

The informal sector contributes significantly to Egypt's Gross Domestic Product (GDP); however, it hinders economic planning and sustainable development due to the lack of official data.

2. Social Hypothesis:

The informal sector plays an important role in providing employment opportunities for low-skilled individuals, but it leads to poor job quality and the absence of social protection.

3. Environmental Hypothesis:

Activities within the informal sector in Egypt often lack compliance with environmental standards, resulting in increased pollution and the degradation of natural resources.

4. Institutional Hypothesis:

Weak legislative and regulatory frameworks in Egypt contribute to the expansion of the informal sector, thereby hindering efforts to integrate it into the formal economy.

5. Sustainable Development Hypothesis:

Integrating the informal sector into the formal economy through appropriate policies can contribute to achieving the Sustainable Development Goals (SDGs), such as poverty reduction and ensuring decent work.

6. Technology-Related Hypothesis:

Reliance on digital transformation may help regulate the informal sector and enhance financial inclusion, thereby contributing to sustainable development.

5.3. Importance of the Hypotheses:

- They facilitate the analysis of the relationship between the informal sector and sustainable development.
- They guide the researcher toward appropriate solutions and policies to address the challenges.

5.3.1. Methods and Techniques for Analyzing the Field Research Sample Data

After completing the data entry process, the research data were analyzed using the following methods:

- [1] Descriptive statistical analysis of the data.
- [2] Advanced statistical analysis of the data.

5.3.2. Research Boundaries

- Spatial Boundaries: A sample of three industrial areas within the Egyptian community.
- Temporal Boundaries: The last ten years (or depending on data availability).
- Subject Boundaries: Focus on the influencing factors and their relationship with sustainable development without detailed legal analysis.

5.3.3. Ethical Considerations

The research adheres to the ethical principles of scientific research, in terms of data confidentiality, obtaining participants' consent, and using the data for scientific purposes only.

6. Results and Analysis

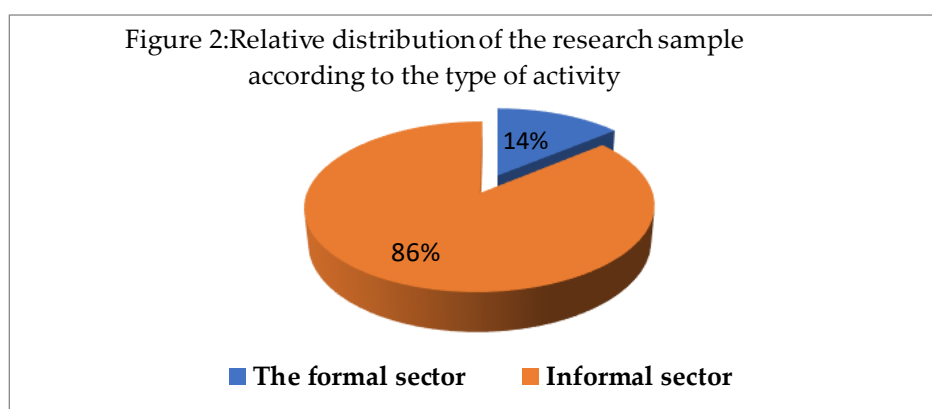
This section reviews the main results derived from the analysis of secondary and field data, providing an analytical interpretation of the economic, social, environmental, technological, educational, institutional, and regulatory factors influencing the informal sector in Egypt, and illustrating the overlap of these factors in shaping the characteristics of this sector and the extent of its scope.

6.1. Research Instrument Reliability

To determine the reliability and internal consistency of the measurement tool (the questionnaire), the results indicated that the reliability coefficient (Cronbach's Alpha) for the [25] items of the questionnaire reached [0.835]. This value is considered high and suitable for research purposes.

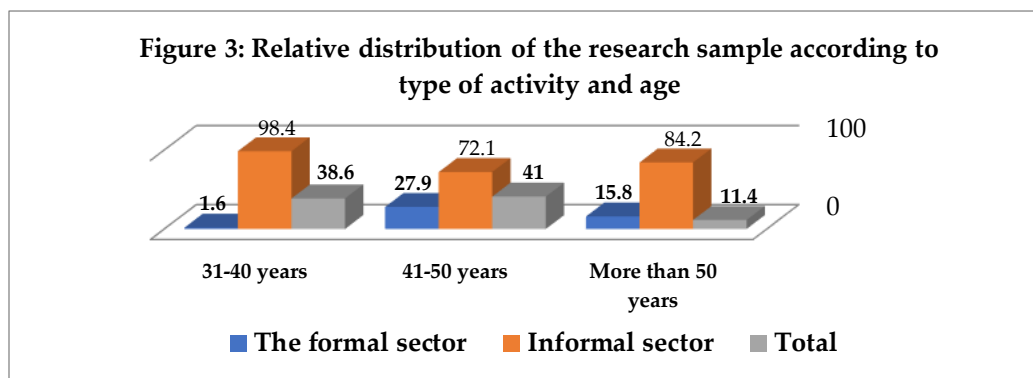
6.2. Analysis Results of Research Sample Characteristics

- Informal Sector Employment: Workers in the informal sector accounted for [86%] of the sample.



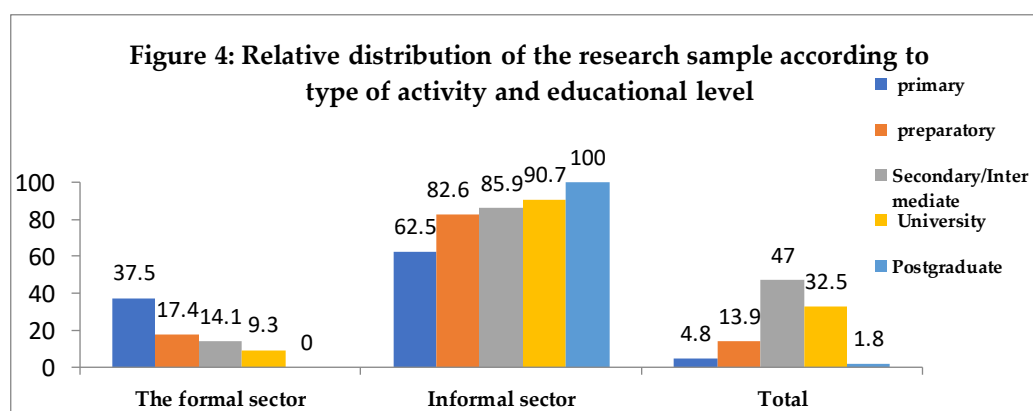
Source: Prepared by the researcher.

- Age and Activity Type: Analysis of the cross-tabulation between age groups and activity type (formal/informal) revealed a statistically significant difference between age categories and the type of activity. The Chi-Square value was approximately [66] with [3] degrees of freedom [d.f. = 3], and the P-value was [0.000] at a significance level of (5%)



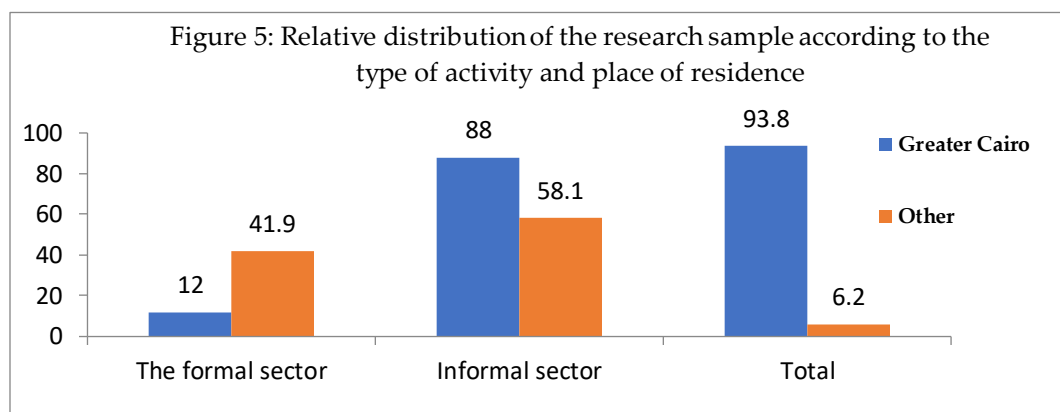
Source: Prepared by the researcher.

- Gender Characteristics: The results of the gender variable analysis showed that the vast majority of the sample were males, representing approximately (74.3%). Analysis of variance between the informal and formal sectors according to gender showed no statistically significant difference between the sector type and gender⁷. The Chi-Square value was [0.114] with 1 degree of freedom [d.f. = 1], and the P-value was [0.74] at a significance level of (5%).
- Educational Level: Analysis of variance between the informal and formal sectors based on educational level indicated no statistically significant difference between the sector type and educational attainment⁹. The Chi-Square value was approximately [16] with [4] degrees of freedom [d.f. = 4] and the P-value was [0.003] at a significance level of (5%)



Source: Prepared by the researcher.

- Place of Residence: Analysis of variance between the sector type (informal/formal) based on residence showed no statistically significant difference between the sector type and the current place of residence for the research sample¹¹. The Chi-Square value was approximately [24.2] with [1] degree of freedom [d.f. = 1] and the P-value was [0.000] at a significance level of 5%)



Source: Prepared by the researcher.

6.3. Economic Factors

- Distribution of the Research Sample According to Type of Activity and Dimensions of Sustainable Development
- Distribution of the Research Sample According to Type of Activity and Economic Development

The researchers identified three variables that may have an impact on the dimension of economic development. These variables are as follows:

[1] Source of Project Financing:

- The results showed that approximately 22% of the research sample financed their projects through bank loans.
- By analyzing the variance between sector type and source of project financing using the Chi-square test, the results indicated that there was no significant difference between the type of activity and the source of project financing, where the Chi-square value reached approximately [7.74] with 3 degrees of freedom.

[2] Difficulty of Government Support or Financing:

- The results revealed that about 42% of respondents faced difficulties in obtaining government support or financing.
- By conducting a hypothesis test between the proportions of activity type (43%) for the informal sector and approximately (41%) for the formal sector and support difficulties, no significant difference was found between them, as the Z value was [0.478].

[3] Profitability of the Informal Sector Compared to the Formal Sector:

- The analysis of the respondents' opinions regarding the profitability of the informal sector compared to the formal sector, according to activity type and the dimension of economic development, showed that approximately 63% of the informal sector sample believed that the informal sector is more profitable. About 48% indicated that it generates significantly higher profits than the formal sector. Hypothesis testing between these two proportions showed a significant difference, with a Z-value of approximately [3.38] and a p-value of [0.00].
- Furthermore, variance analysis between the proportions of respondents' opinions regarding activity type and the profitability of the informal sector, using the Chi-square test, which yielded a value of [13.30] with (2) degrees of freedom, indicated a significant difference between the respondents' opinions

[4] Distribution of the research sample according to the type of activity and social development

The researcher found that there are three variables that may have an impact on the dimension of social development. These variables are represented as follows:

A. Working in the informal sector achieves legal protection:

- The results showed that approximately [46%] of the research sample believe that working in the informal sector provides legal protection.
- By analyzing the variance between the two sectors and the extent to which legal protection is achieved, it was found that there is a statistically significant difference, where the Chi-square value reached [7.494] at a degree of freedom of [2].

B. Social and health insurance:

- The results indicated that approximately 84% of the research sample do not have health or social insurance.
- By analyzing the variance between the two sectors and the availability of social and health insurance using the Chi-square test, it was found that there is no statistically significant difference between their proportions, as the value of $Z = [0.223]$ and the P-Value = [0.412].

C. Working in the informal sector improves the standard of living:

- The results showed that approximately 63% of the research sample believe that working in the informal sector contributes to improving the standard of living.
- The results also indicated that there is a statistically significant difference between the proportions of the type of sector and the improvement in the standard of living, where the value of ($Z = 1.76$) and the P-Value = [0.039]

[5] Distribution of the research sample according to the type of activity and environmental development"

The researcher observed that three variables may have an impact on the environmental development dimension, as follows:

A – The formal sector has a negative impact on the environment

- The results indicated that about 65% of the research sample believe that the informal sector has a negative impact on the environment.
- No significant difference was found between the type of activity and its negative impact on the environment, where the calculated Z-value was approximately [1.446] and P-value = [0.074]

B – Following practices to preserve the environment

- The results showed that about 66% of the research sample believe that the informal sector follows practices that help preserve the environment.
- Analysis between the two types of sectors regarding adherence to environmental preservation practices using the Chi-square test indicated no significant difference, where the Chi-square value was (10.914) with 2 degrees of freedom.

C – The informal sector causes pollution and environmental damage

- The research sample indicated that about 57% believe that informal activities cause environmental pollution.

- Analysis between the two types of sectors and the extent to which informal sector activities cause environmental pollution revealed a significant difference between sector types, where the Chi-square value was (13.489) with 2 degrees of freedom.

6.4. Relationship between Factors Affecting the Informal Sector and the Sustainable Development Goals (Egypt Vision 2030)

Factors Affecting the Dimensions of Sustainable Development

Sustainable development is considered one of the comprehensive developmental concepts, aiming to achieve a balance between economic growth, social justice, and environmental resource conservation, ensuring that the needs of the present generation are met without compromising the ability of future generations to meet their own needs. Achieving this type of development requires understanding and analyzing the various factors that influence its three main dimensions (economic, social, and environmental) as dependent variables.

6.5. Economic Factors and Sustainable Development Goals

The factors affecting these dimensions are considered independent variables. These independent variables include characteristics of the study sample, among which the most prominent are: age (nominal variable), gender (nominal variable), educational level (nominal variable), place of residence (nominal variable), years of experience (nominal variable), and whether the individual works alone in the project.

The researcher also identified three economic variables representing the effects of these factors on the economic dimension of sustainable development. These variables include:

- [1] Source of project funding through a bank loan, which takes a value of 1, and 0 otherwise.
- [2] Difficulties faced in project financing, which takes a value of 1 if difficulties exist and 0 if not.
- [3] Whether the informal sector is more profitable, which takes a value of 1 in this case and 0 if it is not more profitable.

By aggregating the values of the three variables mentioned above and calculating their arithmetic mean, the average was found to be (0.4503). This value is considered the threshold for determining the impact of these variables on the economic dimension: if the value is less than the mean (0.4503), it indicates a negative effect on the economic dimension, in which case the variable takes a value of [1]. If the value is equal to or greater than (0.4503), these variables do not affect the economic dimension and take a value of [0].

A binary logistic regression analysis was conducted to examine the effect of the six independent variables mentioned earlier on the economic dimension of sustainable development as a dependent variable.

The results of the Omnibus test showed that the model as a whole was statistically significant, with a chi-square value (χ^2) of (232) at [13] degrees of freedom and a P-value of 0.00, indicating that the independent variables included in the model significantly contributed to predicting the likelihood of their impact on the economic dimension. The Nagelkerke R^2 value was approximately 0.58, indicating that the model explains about 58% of the variance in the dependent variable, which represents the economic dimension of sustainable development.

The overall classification accuracy of the model was approximately (79%) with a sensitivity of 90.5% and a specificity of (65%), reflecting the model's strong ability to predict the effects of the independent variables on the economic dimension of sustainable development.

6.5. Social and Demographic Factors and Development Goals

Factors Affecting the Social Dimension of Sustainable Development

The researcher identified three social variables representing the effects of these factors on the social dimension of sustainable development. These variables are as follows:

- [1] Legal protection: if the respondent is legally protected, the variable takes a value of [1]; otherwise, it takes a value of [0].
- [2] Access to health or social insurance services: the variable takes a value of [1] if the respondent has health insurance, and [0] if they do not.
- [3] Whether the informal sector improves the standard of living: in this case, it is considered a descriptive independent variable, taking a value of [1] if the informal sector improves living standards, and [0] if it does not.

The values of the three variables above were aggregated, and their arithmetic mean was calculated to be approximately 0.4412. This value was considered the threshold for determining the impact of these variables on the social dimension. If the value is below the mean (0.4412), it indicates a negative effect on the social dimension, in which case the variable takes a value of [1]. If the value is equal to or greater than 0.4412, the variables have no effect on the social dimension, and the variable takes a value of [0].

A binary logistic regression analysis was conducted to examine the effect of the six independent variables previously mentioned on the social dimension of sustainable development as the dependent variable.

The results of the Omnibus test showed that the model as a whole was statistically significant, with a chi-square (χ^2) value of approximately [244] at [13] degrees of freedom and a P-value of (0.00). This indicates that the independent variables included in the model have a significant ability to predict the likelihood of their effect on the social dimension of sustainable development. The Nagelkerke R^2 value was approximately (0.669), indicating that the model explains about (67%) of the variance in the dependent variable representing the social dimension of sustainable development.

Regarding the independent variables in this model, Table [4-11] shows that an independent variable will have a significant effect in predicting the probability of the dependent variable when the regression coefficient (B) is significant at a level less than (0.05). The value of EXP(B) indicates that a one-unit increase in this variable leads to the probability of the event occurring by $(1 - \text{EXP}(B)) \%$. Classification Accuracy

The overall classification accuracy of the model was approximately (87%) with a sensitivity of (89.5%) and a specificity of (82%), reflecting the model's strong ability to predict the effects of the independent variables on the social dimension of sustainable development.

6.6. Factors Affecting the Environmental Dimension of Sustainable Development

The researcher identified three factors representing the environmental dimension of sustainable development. These variables are as follows:

- [1] The negative impact of the informal sector on the environmental dimension: this variable takes a value of [1] if the informal sector has a negative impact on the environmental dimension, and [0] if there is no negative impact on the environmental dimension of sustainable development.
- [2] Practices followed by the informal sector to preserve the environment: this variable takes a value of [1] if the informal sector implements practices that help preserve the environment, and 0 if such practices are not implemented.
- [3] Whether the informal sector causes environmental pollution: this variable takes a value of [1] if the sector causes pollution (negative impact on the environmental dimension), and [0] if it does not cause pollution or impact the environmental dimension.

By aggregating the values of these three variables and calculating their arithmetic mean, the mean was found to be (0.6285). This value was considered the threshold for determining the impact of these variables on the environmental dimension. If the value is below the mean (0.6285), it indicates a negative effect on the environmental dimension of sustainable development, in which case the variable takes a value of [1]. If the value is equal to or greater than (0.6285), these variables have no effect on the environmental dimension, and the variable takes a value of [0].

A binary logistic regression analysis was conducted to examine the effect of the six independent variables previously mentioned on the environmental dimension of sustainable development as the dependent variable.

The results of the Omnibus test showed that the model as a whole was statistically significant, with a chi-square (χ^2) value of (146.27) at [12] degrees of freedom and a P-value of [0.00]. This indicates that the independent variables included in the model had the ability to predict their potential impact on the environmental dimension of sustainable development. The Nagelkerke R^2 value was approximately [0.388], indicating that the model explains about (39%) of the variance in the dependent variable representing the environmental dimension of sustainable development.

Regarding the independent variables, Table 4-11 shows that an independent variable will have a significant effect in predicting the dependent variable if the regression coefficient (B) is significant at a level less than (0.05). The value of EXP(B) indicates that a one-unit increase in this variable leads to the probability of the event occurring by $[1 - \text{EXP}(B)] \%$.

Classification Accuracy

The overall classification accuracy of the model was approximately [77%] with a sensitivity of [60.4%] and a specificity of [84.3%], reflecting the model's good ability to predict the effects of the independent variables on the environmental dimension of sustainable development.

7. Discussion

This discussion seeks to interpret the research findings in light of the theoretical framework and previous literature, focusing on the relationship between the factors influencing the informal sector and their implications for sustainable development in Egypt.

7.1. Economic Discussion

The results confirm that economic factors are the primary drivers of the informal sector's expansion. The analysis demonstrates that the limited growth of the formal sector contributes significantly to the high rates of informal labor. These findings align with previous studies suggesting that non-inclusive growth and the formal sector's inability to provide sufficient job opportunities encourage reliance on informal activities. However, this research adds analytical depth by illustrating the interplay between low income and the cost of living, which compels individuals to combine formal and informal work.

7.2. *Socio-Demographic Discussion*

The discussion indicates that the most vulnerable workers—in terms of age, gender, and education—are the most susceptible to informal employment. This is consistent with regional studies highlighting gender disparities and geographical gaps. The research provides a new understanding of the interaction between poverty, educational attainment, and limited opportunities, emphasizing how the cycle of social marginalization persists, thereby hindering the achievement of justice and equality.

7.3. *Educational Discussion and Human Capital Building*

The research shows that educational deficiencies and the mismatch between education and labor market needs increase the likelihood of engaging in low-productivity informal activities. These results support the Economic Theory of Human Capital and highlight the urgent need to develop vocational education and training programs, linking them to formal labor market requirements to enhance integration opportunities and improve productivity.

7.4. *Institutional and Regulatory Discussion*

The discussion clarifies that institutional complexity and bureaucratic procedures represent major barriers to integrating informal enterprises into the formal economy. This reinforces the importance of improving governance quality, reducing administrative hurdles, and simplifying registration and licensing systems, which aligns with international studies emphasizing the role of effective institutions in reducing the size of the informal sector.

7.5. *Environmental and Spatial Discussion*

The findings indicate that climate change and unplanned urban areas affect the fragility of livelihoods and encourage informal labor. These results reflect the importance of integrating environmental dimensions and sustainable urban planning into policies aimed at curbing informal work.

7.6. *Interaction Between Factors and Sustainable Development Goals (SDGs)*

The discussion illustrates that economic, social, and environmental factors operate in an integrated manner. They overlap to influence the achievement of the Sustainable Development Goals (SDGs), such as poverty eradication, decent work, reduced inequalities, strong institutions, digital transformation, and environmental sustainability. It highlights the necessity of synchronized, comprehensive policies to address these factors holistically to achieve Egypt Vision (2030).

7.7. *Comparison with Previous Studies*

The results align with various international and regional studies regarding the roles of unemployment, poverty, education, and governance in the expansion of the informal sector. However, this study adds a detailed dimension by linking

all these factors to sustainable development indicators within a specific Egyptian context, representing a novel and innovative contribution to the existing literature.

8. Conclusion of the Discussion

The discussion concludes that addressing the informal sector requires comprehensive and integrated policies that account for all influencing factors. Focus must be placed on formalizing the sector, improving the quality of education and training, enhancing governance, utilizing technology, and considering environmental factors. Such an approach effectively and sustainably supports the realization of the SDGs and Egypt Vision (2030).

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Appendices:

Appendix No. 1: Size of Tax losses during the period 2000-2020

year	Source	Size of the informal sector % of GDP	Tax losses (in billion pounds)	The most important events of the period
2015	Central Bank of Egypt Report 2016	35-40%	80-100	Adopting initial tax reforms
2016	Ministry of Finance – 2017	38-42%	100-120	Implementation of the Value Added Tax Law
2017	International Monetary Fund-Financial Control Report 2018	40-45%	120-150	The expansion of the informal sector in trade and services
2018	Central Agency for Public Mobilization and Statistics 2019	42-47%	150-180	Launching the electronic invoicing system
2019	World Bank Report 2020	45-50%	180-220	Increase in tax evasion in the construction sector
2020	Ministry of Finance-Estimated Budget 2021	50-55% (COVID-19)	220-260	The impact of the COVID-19 pandemic on the formal economy
2021	International Monetary Fund-Egyptian Economic Review 2022	48-52%	250-280	Electronic invoice generalization
2022	Central Bank of Egypt Annual Bulletin 2023	45-50%	270-300	Linking licenses to the tax register
2023	Economic estimates from local research centers	43-48%	290-320	Expanding tax documentation programs

Source: CAPMAS [2001, 2006, 2011, 2016 and 2021]

Appendix No. 2: Time series of labor force and income tax in Egypt during the period 2000-2020

Foundation year (Y)	Year	Size of the informal sector in millions	Formal sector size in millions	Percentage of the informal sector	Total income tax in billion	Labor force income tax in billions	Loss due to the informal sector in billions	Loss due to the informal sector (S)	(Y*S)
-10	2000	19.5	10.2	52.3%	9.3	10.5	22.0	11.5	-115
-9	2001	20.1	10.6	52.7%	9.5	12.0	25.4	13.4	-120.6
-8	2002	20.7	10.9	52.7%	9.8	13.5	28.6	15.1	-120.8
-7	2003	21.3	11.3	52.1%	10.0	15.0	32.0	17.0	-119
-6	2004	21.9	11.6	53.0%	10.3	16.5	35.3	18.8	-112.8
-5	2005	22.5	12.0	53.3%	10.5	18.0	38.6	20.6	-103
-4	2006	23.1	12.3	53.2%	10.8	20.4	43.9	23.5	-94
-3	2007	23.6	12.6	53.4%	11.0	22.8	49.1	26.3	-78.9
-2	2008	24.2	13.0	53.7%	11.3	25.2	54.4	29.2	-58.4
-1	2009	24.7	13.3	53.8%	11.4	27.6	59.6	32.0	-32
zero	2010	25.3	13.6	53.8%	11.7	30.0	64.9	34.9	zero
1	2011	26.0	14.0	53.8%	12.0	36.0	77.8	41.8	41.8
2	2012	26.7	14.3	53.6%	12.4	42.0	90.7	48.7	97.4
3	2013	27.3	14.7	53.8%	12.6	48.0	103.7	55.7	167.1
4	2014	28.0	15.0	53.6%	13.0	54.0	116.6	62.6	250.4
5	2015	28.7	15.4	53.7%	13.3	60.0	129.5	69.5	347.5
6	2016	29.1	15.6	53.6%	13.5	72.0	155.9	83.9	503.4
7	2017	29.4	15.8	53.0%	13.6	84.0	182.3	98.3	688.1
8	2018	29.8	16.1	54.0%	13.7	96.0	208.7	112.7	901.6
9	2019	30.1	16.3	54.2%	13.8	108.0	235.1	127.1	1143.9
10	2020	30.5	16.5	54.1%	14.0	120.0	261.5	141.4	1414

Source: CAPMAS (2001, 2006, 2011, 2016 and 2021). The interstitial years were calculated by the researchers using linear interpolation.

Appendix No. 3: Key features of the research community

Key Features	Industrial Zone		Al-Ataba Market		Rubiki	
	formal	Informal	formal	Informal	formal	Informal
<u>Sax</u>						
– male	75%	65%	60%	70%	80%	90%
– female	25%	35%	40%	30%	20%	10%
<u>Age groups</u>						
– Under 25 years old	10%	15%	10%	20%	35%	35%
– 25-40 years	55%	50%	55%	50%	45%	40%
– Over 45 years	35%	35%	35%	30%	25%	25%
<u>Educational level</u>						
– My numbers and less	20%	35%	15%	25%	10%	35%
– Secondary education	45%	50%	45%	50%	60%	50%
– University education	35%	15%	40%	25%	30%	15%
<u>Job type</u>						
– Production, manufacturing, sales	50%	70%	55%	80%	80%	70%
– Equipment maintenance and operation	-	7%	-	10%	10%	20%
– Management and supervision	30%	15%	25%	10%	7%	7%
– Services and others	20%	8%	20%	-	3%	3%
<u>Total</u>						
– number (in thousands)	40-55	90-120	45	12 - 15	10	4
– %	20%	20%	45%	60-70%	71%	29%
Total workforce (in thousands)	130 - 175		17-22		14	

Source: Calculated by the researcher

Appendices No. 4: Questionnaire

[illegible]

القسم الثاني : الأمانة الاقتصادية

تهدف هذه الأسسطة إلى فهم تأثير القطاع غير الرسمي على الجوانب الاقتصادية .

هذه تعمل في القطاع غير الرسمي؟ (٤٠٦)

- [illegible]

جامعة القاهرة

كلية الدراسات العليا للبحوث الإحصائية

استمارة المبحوث

بحث

القطاع غير الرسمي والتنمية المستدامة في مصر
(رؤية مصر ٢٠٣٠)

برازات هذا البحث سرية ولن تستخدم في غير أغراض البحث العلمي

1

القسم الأول : المعلومات العامة:

تهدف هذه الأساطير إلى جمع بيانات أساسية حول العينة المستهدفة في الاستبيان.

- ١ **الجمد (١.١)**
- ٢ ☐ أقل من ٢٠ سنة
- ٣ ☐ 20-30 سنة
- ٤ ☐ 31-40 سنة
- ٥ ☐ 41-50 سنة
- ٦ ☐ أكثر من ٥٠ سنة
- ٧ **الجنس (١.٢)**
- ٨ ☐ ذكر
- ٩ ☐ أنثى
- ١٠ **المستوى التعليمي (٢.٣)**
- ١١ ☐ بدون تعليم
- ١٢ ☐ ابتدائي
- ١٣ ☐ إعدادي
- ١٤ ☐ ثانوي أو متوسط
- ١٥ ☐ جامعي
- ١٦ ☐ ماجستير أو أعلى
- ١٧ **الموقع الجغرافي (محت الإقامة الحالي) (١.٤)**
- ١٨ ☐ القاهرة
- ١٩ ☐ الإسكندرية
- ٢٠ ☐ الدلتا
- ٢١ ☐ الصعيد
- ٢٢ ☐ أخرى (يرجى التحديد)
- ٢٣ **المجال أو نشاط الاقتصادي الذي تعمل فيه (١.٥)**
- ٢٤ ☐ تجارة
- ٢٥ ☐ صناعة
- ٢٦ ☐ زراعة
- ٢٧ ☐ خدمات (مثل: النقل، الحرف اليدوية ...)
- ٢٨ ☐ آخر (يرجى التحديد:)

- ما هي حجم الإيرادات الشهرية لمشروعك؟ (إذا كنت صاحب مشروع)؟ (٢٠٧)
- أقل من ١٠٠٠ جنية
- 1000-5000 جنية
- 5001-10000 جنية
- أكثر من ١٠٠٠٠ جنية
- هل تجد صعوبة في الحصول على تمويل أو دعم حكومي لمشروعك؟ (٢٠٨)
- نعم
- لا
- أحياناً
- هل تريد أن العمل في القطاع غير الرسمي أكثر ربحية مقارنة بالعمل في القطاع الرسمي؟ (٢٠٩)
- نعم
- لا
- لا أعلم

القسم الرابع : الأبنية البيئية:

تهدف هذه الأسئلة إلى قياس تأثير القطاع غير الرسمي على البيئة، مثل التلوث أو استهلاك الموارد الطبيعية.

- هل يوجد تلوث بيئي من نشاطك في القطاع غير الرسمي؟ (٤٠١)
- نعم
- لا
- غير متأكد
- هل تتبع أي ممارسات للحفاظ على البيئة في نشاطك الاقتصادي؟ (٤٠٢)
- نعم
- لا
- لا أحتاج لذلك
- هل تجد أن الأنشطة غير الرسمية تسبب في تلوث أو ضرر البيئة في منطقتك؟ (٤٠٣)
- نعم
- لا
- أحياناً
- هل تعتقد أنه يمكن تحسين تلوث القطاع غير الرسمي على البيئة؟ (٤٠٤)
- نعم
- لا
- لا أعلم



- ما هي حجم الإيرادات الشهرية لمشروعك؟ (إذا كنت صاحب مشروع)؟ (٢٠٧)
- أقل من ١٠٠٠ جنية
- 1000-5000 جنية
- 5001-10000 جنية
- أكثر من ١٠٠٠٠ جنية
- هل تجد صعوبة في الحصول على تمويل أو دعم حكومي لمشروعك؟ (٢٠٨)
- نعم
- لا
- أحياناً
- هل تريد أن العمل في القطاع غير الرسمي أكثر ربحية مقارنة بالعمل في القطاع الرسمي؟ (٢٠٩)
- نعم
- لا
- لا أعلم

القسم الثالث الأسئلة الاجتماعية:

تهدف هذه الأسئلة إلى فحص تأثير القطاع غير الرسمي على الجوانب الاجتماعية مثل العدالة الاجتماعية، حقوق العمال، ورفاهية الأفراد.

- هل تشعر أنك محصي كاتوياً كعامل في القطاع غير الرسمي؟ (٣٠١)
- نعم
- لا
- جزئياً
- هل لديك تأمين اجتماعي أو صحي؟ (٣٠٢)
- نعم
- لا
- هل تحصل على إعانات مدفوعة الأجر أو مكافآت في حالة غيابك؟ (٣٠٣)
- نعم
- لا
- هل تواجه تحديات في الوصول إلى الحقوق الأساسية مثل الرعاية الصحية بسبب عملك في القطاع غير الرسمي؟ (٣٠٤)
- نعم
- لا



- هل يوفر القطاع غير الرسمي فرص عمل لثلاث الأكثر ضعفاً (ملاك الشباب، النساء، أو ذوي الاحتياجات الخاصة)؟ (٧٠٣)
- نعم
- لا
- أحياناً

- هل تشعر أن القطاع غير الرسمي يساهم في استنزاف الموارد الطبيعية؟ (٧٠٤)
- نعم
- لا
- غير متأكد

- هل تستخدم ممارسات صديقة للبيئة في نشاطك التجاري؟ (٧٠٥)
- نعم
- لا
- أحياناً

- هل تجد صعوبة في تطبيق ممارسات بيئية مستدامة بسبب القيود الاقتصادية أو نقص المعرفة؟ (٧٠٦)
- نعم
- لا
- أحياناً

أسئلة حول الممارسات الحكومية:

تهدف هذه الأسئلة إلى فهم وجهات نظر العاملين في القطاع غير الرسمي حول الممارسات الحكومية كساهم في إيجاد حلول صديقة للمشاكل التي يواجهونها.

- هل تعتقد أن هناك نقصاً في سياسات الحكومة نحو القطاع غير الرسمي في السنوات الأخيرة؟ (٨٠١)
- نعم
- لا
- غير متأكد
- هل تعتقد أن الحكومة تقدم الحوافز المناسبة لدمج القطاع غير الرسمي في الاقتصاد الرسمي؟ (٨٠٢)
- نعم
- لا
- لا أعلم



القسم الخامس : الأثر

تهدف هذه الأسئلة إلى فهم التحديات التي يواجهها العاملون

- ما هي أبرز التحديات التي تواجهها في عملك؟
- ضعف التنظيم القانوني
- نقص التمويل
- المنافسة غير العادلة من القطاع الر
- عدم وجود حماية اجتماعية
- صعوبة الوصول إلى الأسواق
- أخرى (يرجى التحديد)
- هل ترغب في تحويل عملك إلى القطاع الرسم
- نعم
- لا
- غير متأكد
- ما هي الأسباب التي تمنعك من تحويل عملك
- الإجراءات القانونية معقدة
- تكلفة الانتقال للتسويق
- عدم وجود حوافز من الحكومة
- عدم وجود دعم كافي للشروعات الم
- لا يوجد سبب محدد
- ما هي أنواع الدعم التي تحتاجها لتطوير عم
- دعم مالي
- شهادات قانونية
- برامج تدريبية
- دعم فني
- أخرى (يرجى التحديد)

بيئية:

الاقتصاد الرسمي.

إع لرسمي؟ (٦٠٢)

(٦٠٣)

استدامة:

العدالة الاجتماعية؟

(٧٠٦)

أحمد

أحمد

• هل كانت لديك تجربة مع مؤسسات حكومية في محاولة لتسجيل أو تنظيم حملتك؟ (٨٠٣)

أ) نعم

ب) لا

ج) نعم، ولكن كانت التجربة صعبة أو محبطة

(اختياري)

هل ترغب في إضافة أي تعليقات أو اقتراحات حول لقطاج غير الرسمي في مصر؟

.....

.....

.....

نشكر المبحوث على حسن تعاونه

مع تمنياتي بالتوفيق



أ. م. محمد
مدير

Appendix No. 5: Approval



قرار رئيس الجهاز المركزي للتعبئة العامة والإحصاء

بالتفويض رقم (٢٢٦) لسنة ٢٠٢٥

في شأن قيام الباحث / محمد عبدالمنعم عبدالرؤوف محمد السيد - المسجل لدرجة الدكتوراة / تخصص الإحصاء الحيوي و السكاني كلية الدراسات العليا للبحوث الإحصائية / جامعة القاهرة - بإجراء دراسة ميدانية بعنوان: (القطاع غير الرسمي و التنمية المستدامة في مصر "رؤية مصر ٢٠٣٠").

رئيس الجهاز

- بعد الإطلاع على القرار الجمهوري رقم (٢٩١٥) لسنة ١٩٦٤ بشأن إنشاء الجهاز المركزي للتعبئة العامة والإحصاء.
- وعلى قرار رئيس الجهاز رقم (٢٣١) لسنة ١٩٦٨ في شأن إجراء الإحصاءات والتعدادات والاستفتاءات والاستقصاءات.
- وعلى قرار رئيس الجهاز رقم (١٣١٤) لسنة ٢٠٠٧ بشأن التفويض في بعض الاختصاصات.
- وعلى قرار رئيس الجهاز رقم (١٥٥٢) لسنة ٢٠٢١ بشأن التفويض في بعض الاختصاصات.
- وعلى كتاب كلية الدراسات العليا للبحوث الإحصائية / جامعة القاهرة - الوارد للجهاز في ٢٠٢٥/٢/٢٣.

قرر

- مادة ١: يقوم الباحث / محمد عبدالمنعم عبدالرؤوف محمد السيد - المسجل لدرجة الدكتوراة / تخصص الإحصاء الحيوي و السكاني كلية الدراسات العليا للبحوث الإحصائية / جامعة القاهرة - بإجراء الدراسة الميدانية المشار إليها عالية.
- مادة ٢: تجري الدراسة على عينة حجمها (٥٠٠) خمسمائة مفردة من العاملين بالمنطقة الصناعية بالسادس من أكتوبر بمحافظة الجيزة ومدينة الروبيكي و سوق العتبة بمحافظة القاهرة.
- مادة ٣: تجمع البيانات اللازمة لهذه الدراسة بموجب الاستمارة المعدة لذلك وعدد صفحاتها عشر صفحات معتمدة كل صفحة منها بخاتم الجهاز المركزي للتعبئة العامة والإحصاء.
- مادة ٤: تقوم المصانع بالمنطقة الصناعية المستهدفة - وتحت إشراف إدارة الأمن بكل منها - بتيسير إجراء هذه الدراسة الميدانية مع مراعاة الضوابط الخاصة بتقييم درجة سرية البيانات والمعلومات المتداولة مسبقاً بمعرفة كل جهة طبقاً لما جاء بخطة الأمن بها.
- مادة ٥: يراعى موافقة مفردات العينة - وسرية البيانات الفردية طبقاً لقانون الجهاز رقم (٣٥) لسنة ١٩٦٠ والمعدل بالقانون رقم (٢٨) لسنة ١٩٨٢ وعدم استخدام البيانات التي يتم جمعها لأغراض أخرى غير أغراض هذه الدراسة.
- مادة ٦: يجري العمل الميداني خلال ثلاثة أشهر من تاريخ صدور هذا القرار .
- مادة ٧: يوافق الجهاز المركزي للتعبئة العامة والإحصاء بنسخة من النتائج النهائية لهذه الدراسة.
- مادة ٨: يلتزم الباحث / محمد عبدالمنعم عبدالرؤوف محمد السيد - بإبلاغ مديرية الأمن بمحافظة القاهرة - بصورة من هذا القرار وقبل البدء في التنفيذ مرفقاً بها بيانات القائمين بالبحث (الاسم - الرقم القومي - تاريخ بدء وانتهاء تنفيذ الدراسة)
- مادة ٩: ينفذ هذا القرار من تاريخ صدوره .

صدر في: ٢٠٢٥ / ٢ / ٢٦

محمد إبراهيم بخيت
مدير عام الإدارة العامة للأمن

Appendix No. 6: Distribution of the research sample by characteristics and type of activity.

Sector <

Source: Calculated by the researcher

Appendix No. 7: The relative distribution of the type of activity according to economic development.

Type of activity phrase	Informal Sector	formal sector	Total	Chi Square	df	Z	P_value
<u>Project Funding</u>							
- Savings / Family/Friends	65.1	75.6	68.6	7,737	3	1,362	0.087
- Bank loan	23.5	18.0	21.6				
- Other	11.4	6.4	9.8				
<u>Difficulty in obtaining government</u>	43.0	40.8	42.2	4,054	2	0,478	0.316
- Yes	52.8	58.0	54.7				
- no	4.2	1,2	3.1				
- sometimes							
<u>Profitability of the informal Sector.</u>							
- Yes	63.4	47.8	57.7	13,344	2	3,378	0.00
- no	31.4	41.1	35.00				
- I don't know	5.12	11.1	7.3				

Source: Calculated by the researcher

Appendix No. 8: The relative distribution of the type of activity according to social development.

Type of activity phrase	Informal Sector	formal sector	Total	Chi Square	df	Z	P_value
<u>legal protection:</u>							
- Yes	46.3	45.6	46.0	7,494	2	1,237	0.11
- no	47.6	53.3	49.7				
- partially	6.1	1.1	4.3				
<u>Social and health insurance.</u>							
- Yes	16.1	15.3	15.8	0.050	1	0.223	0.412
- No	83.7	84.7	84.2				
<u>Improves standard of living.</u>							
- Yes	66.1	58.2	63.3	6,644	2	1.76	0.039
- no	29.7	32.4	30.7				
- a little	4.2	9.3	6.0				

Source: Calculated by the researcher

Appendix No. 9: The relative distribution of sector type according to environmental development

Type of activity phrase	Informal Sector	formal sector	Total	Chi Square	df	Z	P_value
<u>a negative impact</u>							
- Yes	67.4	61.0	65.1				
- no	30.4	34.6	31.9	3,202	2	1,446	0.074
- Not sure	2.2	4.4	3.0				
<u>Environmental conservation practices.</u>							
- Yes	68.00	63.2	66.3				
- no	32.0	33.5	32.5	10,914	2	1,103	0.135
- I don't need that	0.0	3.3	1,2				
<u>cause pollution</u>							
- Yes	55.1	61.0	57.2				
- no	44.9	35.7	41.6	13,489	2	1,287	0.1
- sometimes	0.0	3.3	1,2				

Source: Calculated by the researcher

Appendix No. 10: The relative distribution of economic dimensions and assessment parameters

Economic Variables	Project financing							Difficulty in securing funding and government support							The informal sector is more profitable							
	Loan from a bank			Model assessment features				Financing difficulties			Model assessment features				Sector profitability			Model assessment features				
	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**	
<u>Age</u>	31,4	3,7	0,29	-	0,01	-	0.38	42,2	12,4	0,01	-	-	-	0.38	57,7	18,3	0,00	-			0.25	
Less than 30	28,3	--	--	-0,9	0,13	0,397		54,3	--	--	-	-	-		67,4	--	--	-				
30-50	32,7	--	--	0,05-	0,91	0,946		38,7	--	--	-	-	-		54,4	--	--	-				
More than 50	23,4	--	--	0,67	0,14	1,96		57,1	--	--	-	-	-		73,2	--	--	-				
<u>Sex</u>	31,4	15,4	0,00	-	-	-		43,3	0,87	0,35	-	-	-		57,9	0,00	1,0	-				
male	38,5	--	--	1,30	0,00	3,68		42,1	--	--	-	-	-		57,9	--	--	-				
Female	18,4	--	--	-	-	-		47,2	--	--	-	-	-		57,9	--	--	-				
<u>Education</u>	31,4	50,9	0,00	-	0,00	-		42,2	27,2	0,00	-	-	-		57,7	23,8	0,00	-	0,00	--		
>average	33,3	--	--	-4,05	1,00	0,02		44,3	--	--	-	-	-		36,4	--	--	-22	0,99	0,00		
middle	20,8	--	--	19,8	0,99	393		46,6	--	--	-	-	-		64,0	--	--	-20	0,99	0,00		
University +	51,0	--	--	18,6	0,99	118		40,7	--	--	-	-	-		57,6	--	--	-20	0,99	0,00		
<u>Place of resi- dence</u>	31,4	13,4	0,00	-	-	-		42,8	21,4	0,00	-	-	-		58,4	7,0	0,03	-	1,00	--		
Cairo	31,4	--	--	-	-	-		45,3	--	--	-	-	-		57,9	--	--	-20	0,99	0,00		
Other	0,00	--	--	-	-	-		0,00	--	--	-	-	-		50,0	--	--	-0,6	1,00	0,56		
<u>Experience</u>	31,4	18,1	0,00	-	0,00	-		42,2	34,7	0,00	-	0,00	-		57,7	9,16	0,03	-	0,00	--		
>5 years	38,9	--	--	4,22	0,00	68,2		62,8	--	--	19,5	0,99	299		60,5	--	--	1,27	0,08	3,54		
5-10	37,9	--	--	2,28	0,00	9,82		29,5	--	--	1,35	0,00	3,85		49,2	--	--	0,62	0,08	1,86		
10 or more	20,3	--	--	1,58	0,00	4,85		40,4	--	--	-0,8	0,00	0,45		64,4	--	--	-0,8	0,00	0,44		
<u>works alone</u>	31,4	4,1	0,04	-	-	-		42,0	58,6	0,01	-	-	-		59,1	46,6	0,00	-	-	--		
Yes	34,1	--	--	-	-	-		49,3	--		38,5	0,99	514		65,4	--	--	1,46	0,00	4,31		
No	21,7	--	--	-	-	-		0,00	--		-		-		21,7	--	--		--	--		
The constant	----			-22	0,99	0,00		---			-38	0,99	0,00					40,4	0,99	355		
Classification Ta- ble				80,3%							71,0%							71,4%				

**Nagelkerke R2

Source: Calculated by the researcher from research sample data

Appendix No. 11: Relative Distribution of Social Dimensions and Rating Parameters

Economic Variables	Legal protection							He has health or social insurance							The informal sector improves living standards									
	Legally protected			Model assessment features				He has insurance			Model assessment features				Improves level			Model assessment features						
	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**			
<u>Age</u>	46.0	10.2	0.02	0.49	0.00	-	0.53	15.8	17.8	0.00	-	-	-	0.4	63.3	49.6	0.00	-	0.26	-	0.3			
Less than 30	45.7	-	-	-2.4	0.40	1.63		0.0	-	-	-	-	-		100	-	-	19.9	0.99	48.3				
30-50	43.4	-	-	-1.78	0.00	0.09		15.5	-	-	-	-	-		56.2	-	-	-0.3	0.46	0,720				
More than 50	58.9	-	-		0.00	0.169		31.9	-	-	-	-	-		83.9	-	-	-0.7	0.11	0,501				
<u>Sex</u>	44.1	22.4	0.00	-	0.00	-		14.7	55.2	0.00	-	-	-		65.8	7.41	0.01	-	-	-				
male	37.7	-	-	-2.1	0.00	0.123		7.8	-	-	-2.7	0.00	0.07		62.4	-	-	-	-	-				
Female	63.2	-	-	-	-	-		40.7	-	-	-	-	-		76.3	-	-	-	-	-				
<u>education</u>	46.0	27.9	0.00	17.1	0.00	-		15.8	12.9	0.01	-	-	-		63.3	5.8	0.22	-	-	-				
>average	59.1	-	-	21.8	0.99	0.00		15.8	-	-	-	-	-		61.8	-	-	-	-	-				
middle	37.3	-	-	-23.3	0.99	0.00		21.5	-	-	-	-	-		64.1	-	-	-	-	-				
University +	75.5	-	-		0.99	0.00		11.4	-	-	-	-	-		61.1	-	-	-	-	-				
<u>Place of resi-</u>	46.6	28.7	0.00	22.1	1.00	-		16.1	98.4	0.00	-	-	-		64.0	6.60	0.04	-	-	-				
<u>dence</u>	45.4	-		-41.9	0.99	0.00		12.2	-	-	-24	0.99	0.00		63.9	-	-	-	-	-				
Cairo	50.0	-			0.99	0.00		50.0	-	-	-	-	-		50.0	-	-	-	-	-				
<u>Experience</u>	46.0	24.6	0.00	2.15	0.00	-		15.8	10.6	0.01	-	-	-		63.3	11.0	0.01	-	0.00	-				
>5 years	31.6	-	-	-4.29	0.00	0.117		10.7	-	-	-	-	-		66.4	-	-	0.02	0.97	1,019				
5-10	50.8	-	-	0.94	0.00	0.014		20.4	-	-	-	-	-		55.7	-	-	-0.9	0.01	0,384				
10 or more	54.2	-	-		0.00	2,567		17.4	-	-	-	-	-		71.2	-	-	-1.4	0.00	0.259				
<u>works alone</u>	47.2	5.0	0.03	-	0.00	-		16.3	0.55	0.48	-	-	-		63.6	60.8	0.00	-	-	-				
Yes	49.3	-	-	1.77	0.00	5.90		15.8	-	-	-	-	-		70.5	-	-	2.02	0.00	1.005				
No	34.8	-	-	-	-	-		20.0	-	-	-	-	-		21.7	-	-	-	-	-				
The constant	----			23,548				--			23.9							0.005						
Classification Table	---			54.4%				--			87.1%							71.3%						

**Nagelkerke R2

Source: Calculated by the researcher from data. Research sample

Appendix No. 12: Relative distribution of environmental dimensions and assessment parameters

Economic Variables	negative impact							Environmental conservation practices							It causes environmental pollution									
	It has a negative impact.			Model assessment features				Environmental con- servation			Model assessment features				It causes environ- mental pollution			Model assessment features						
	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**			
<u>Age</u>	65.1	15.7	0.0	-	0.01	-	0.26	66.3	1.49	0.68	-	0.01	-	0,357	57.2	25.9	0.0	-	0.0	-	0.29			
Less than 30	73.9	-	-	-0.31	0.55	0.73		67.4	-	-	-0.1	0.90	0.94		41.3	-	-	-2.4	0.0	0.09				
30-50	61.2	-	-	0.004	0.99	1.00		64.6	-	-	1.26	0.00	3.54		55.0	-	-	-1.9	0.0	0.15				
More than 50	83.9	-	-	-0.81	0.06	0.45		73.2	-	-	0.74	0.07	2.09		83.9	-	-	-1.5	0.0	0.23				
<u>Sex</u>	65.2	0.71	0.4	-	-	-		66.5	0.03	0.86	-	-	-		56.1	22.8	0.00	-	-	-				
male	64.1	-	-	-	-	-		66.7	-	-	-	-	-		62.4	-	-	1.57	0.0	4.78				
Female	68.4	-	-	-	-	-		65.8	-	-	-	-	-		36.8	-	-	-	-	-				
<u>education</u>	65.1	10.4	0.03	-	-	-		71.0	18.3	0.00	-	-	-		57.2	19.7	0.00	-	-	-				
>average	57.3	-	-	-	-	-		64.1	-	-	-	-	-		40.5	-	-	-	-	-				
middle	66.7	-	-	-	-	-		64.6	-	-	-	-	-		56.4	-	-	-	-	-				
University +	66.7	-	-	-	-	-		65.0	-	-	-	-	-		65.2	-	-	-	-	-				
<u>Place of residence</u>	65.9	6.68	0.03	-	-	-		67.1	6.79	0.03	-	-	-		57.9	20.7	0.00	-	-	-				
Cairo	65.8	-	-	-	-	-		67.1	-	-	-	-	-		55.5	-	-	-	-	-				
Other	50.0	-	-	-	-	-		50.0	-	-	-	-	-		100	-	-	-	-	-				
<u>Experience</u>	65.1	38.7	0.00	-	0.00	-		66.3	35.6	0.00	-	0.00	-		57.2	50.9	0.00	-	0.0	-				
>5 years	80.0	-	-	21.0	0.99	12.66		85.7	-		21.6	0.99	25,23		47.5	-	-	-0.9	0.0	0.42				
5-10	52.5	-	-	-0.50	0.12	0.61		52.5	-		0.65	0.09	1.91		47.5	-	-	-1.8	0.0	0.16				
10 or more	74.6	-	-	-1.33	0.00	0.27		71.2	-		-1.5	0.00	0.21		78.0	-	-	-1.0	0.0	0.35				
<u>He works alone</u>	65.4	43.5	0.00	-	-	-		66.7	73.0	0.00	-	-	-		57.4	6.38	0.01	-	-	-				
Yes	71.2	-	-	2.09	0.00	8.08		74.1	-	-	3.51	0.00	33.4		59.7	-	-	0.97	0.0	2.63				
No	30.4	-	-	-	-	-		21.7	-	-	-	-	-		43.5	-	-	-	-	-				
The constant				-0.257							-2,689							0,717						
Classification Table				67.3%							74.7%							69.3%						

**Nagelkerke R2

Source: Calculated by the researcher from research sample data

Appendix No. 13: Relative distribution of the dimensions of sustainable development (economic, social, and environmental) and assessment parameters

Economic Variables	Economic dimension							social dimension							Environmental dimension									
	economic impact			Model assessment features				social impact			Model assessment features				Environmental im- pact			Model assessment features						
	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**	%	X2	Sig.	B	Sig.	Exp(B)	**			
<u>Age</u>	57.6	21.0	0.00	-	0.00	-	0.58	64.7	35.5	0.00	-	0.00	-	0.67	33.1	12.4	0.01	-	0.03	-	0.39			
Less than 30	45.7	-	-	2.77	0.00	15.9		54.3	-	-	-0.7	0.30	0.51		26.1	-	-	1,2	0.73	0,197				
30-50	62.4	-	-	0.90	0.08	2.45		71.7	-	-	4.1	0.00	60.9		36.3	-	-	0.4	0.05	-1.02				
More than 50	31.9	-	-	0.054	0.91	1.05		29.8	-	-	3.4	0.00	30.9		16.1	-	-	0.7	0.48	-0.34				
<u>Sex</u>	56.4	0.79	0.37	-	-	-		64.3	53.9	0.00	-	0.00	-		32.9	5.79	0.12	-	-	-				
male	57.7	-	-	-	-	-		57.9	-	-	3.4	0.00	31.0		29.9	-	-	0.51	0.02	-0.67				
Female	52.8	-	-	-	-	-		29.6	-	-	0.0	-	-		10.3	-	-	-	-	-				
<u>education</u>	57.6	22.9	0.00	-	0.00	-		64.7	21.4	0.00	-	0.00	-		33.1	5.99	0.20	-	0.04	-				
>average	78.6	-	-	36.4	0.99	In		60.2	-	-	18.8	0.99	In		38.3	-	-	20.4	0.99	20.46				
middle	55.7	-	-	20.7	0.99	In		64.5	-	-	23.4	0.99	In		33.3	-	-	17.5	0.99	17.47				
University +	58.8	-	-	22.1	0.99	In		72.7	-	-	34.5	0.99	In		31.5	-	-	18.2	0.99	18,31				
<u>Place of resi- dence</u>	57.0	21.6	0.00	-	1.00	-		64.2	33.8	0.00	-	-	-		32.3	6.87	0.03	-	0.00	-				
Cairo	54.3	-	-	-20.3	0.99	0.00		67.2	-	-	24.6	0.99	In		32.3	-	-	-	0.99	-				
Other	100	-	-	2.19	1.00	8.91		0.0	-	-	0.0	--	-		50.0	-	-	-	0.86	-				
<u>Experience</u>	57.6	20.4	0.00	-	0.00	-		64.7	15.8	0.00	-	0.00	-		33.1	55.3	0.00	-	0.00	-				
>5 years	38.4	-	-	-22.8	0.99	0.00		84.0	-	-	21.1	0.99	In		34.3	-	-	-0.22	0.99	-22.4				
5-10	63.8	-	-	-4.04	0.00	0.18		63.0	-	-	4.54	0.00	In		50.8	-	-	0.08	0.86	0.08				
10 or more	63.2	-	-	0.89	0.02	2.43		58.7	-	-	-1.7	0.00	In		20.3	-	-	2.4	0.00	2.43				
<u>works alone</u>	56.5	63.1	0.00	-	0.99	-		63.6	5.88	0.01	-19.2	-	-		32.7	49.6	0.00	-	-	-				
Yes	48.4	-	-	-23.3	0.99	0.00		61.5	-	-	-	0.99	0.00		26.6	-	-	-3.1	0.00	-3.06				
No	100	-	-	0.0	0.00	-		80.0	-	-	-	-	-		69.6	-	-	-	-	-				
The constant				21,466							-34.16							-16,457						
Classification Table				79.0%							86.8%							76.7%						

**Nagelkerke R2

Source: Calculated by the researcher from research sample data

